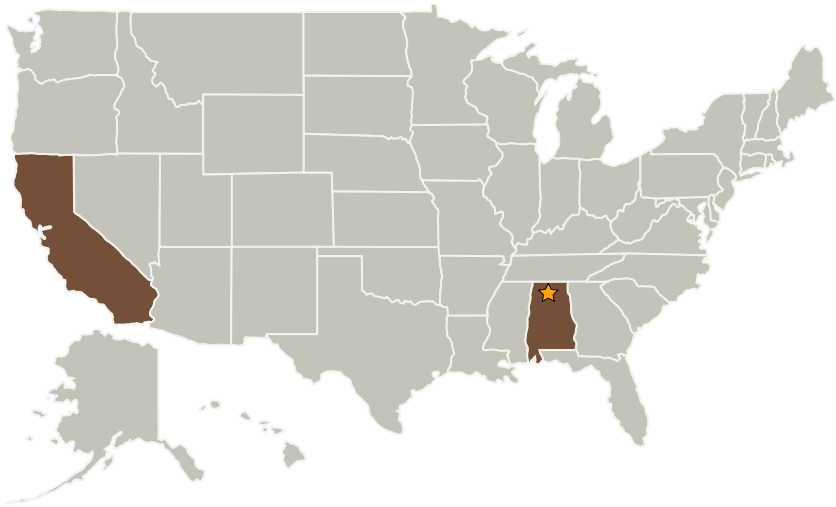
Advanced Heat Transfer Fluids, Phase I

Completed Technology Project (2005 - 2005)

Project Introduction

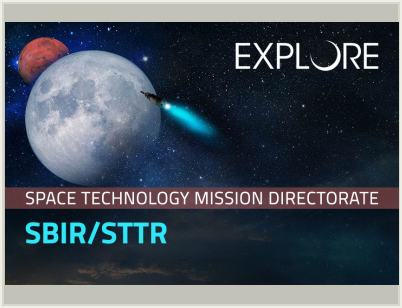
Future NASA instrumentation will require increasingly sophisticated thermal control technology. We propose a next-generation nanofluid that consists of precisely manufactured nanoparticles that are added to existing coolant liquids. Even at very low loading levels, the nanoparticles dramatically increase the thermal conductivity and the critical heat flux of the fluid. Due to their small size, settling, abrasion, and clogging issues are eliminated, enabling the nanofluid to be immediately incorporated into existing thermal management systems.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Marshall Space Flight Center(MSFC)	Lead Organization	NASA Center	Huntsville, Alabama
nanoComposix, Inc.	Supporting Organization	Industry	San Diego, California

Primary U.S. Work Locations	
Alabama	California



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Marshall Space Flight Center (MSFC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Steven Oldenburg

Technology Areas

Primary:

- TX14 Thermal Management Systems
  - TX14.2 Thermal Control Components and Systems
    - TX14.2.8 Measurement and Control